

Cereal Leaf Beetle Detection Survey

***Oulema melanopus* (L.)**

Cereal leaf beetle (CLB), pictured below, is an exotic quarantine pest of forage and cereal grains. It is commonly found on small grains, particularly wheat, barley, and oats. The adults and immatures feed on the developing plants, at times causing extreme defoliation.



Image from <http://www.padil.gov.au>

Adult cereal leaf beetle.
Approximate length 1/8 to 1/4 inch long.

During 2008, as in the past, routine surveys were conducted for CLB. Up to 5 samples were taken in each of the 30 surveyed counties, with a sample consisting of two sets of 50 sweeps with a 15-inch sweep net. When choosing fields to sample, preference was given to spring planted grains.

Cereal leaf beetles were found in 4 Montana counties during the 2008 sampling season. Counties that had been found positive for CLB in the past were not necessarily sampled during 2008. In total, 48 of Montana's 56 counties have had CLB detections since the discovery of the pest in the late 1980's. There were no noted range expansions for this pest during 2008 and the counties that remain free of CLB based on official survey are: Glacier, Liberty, Hill, Phillips, Valley, Daniels, Sheridan, Roosevelt, and Fallon.

Cereal Leaf Beetle Parasitoids

***Tetrastichus julis* (Walker) & *Anaphes flavipes* (Förster)**

The Cereal leaf beetle has spread across much of Montana during the past two decades. While initial movement was accompanied by severe outbreaks and economic damage, in more recent years the outbreaks have not been as severe. This may be, in part, due to the nature of the newly

infested areas, which are generally drier and therefore less hospitable to the immature beetles. It may also be due to the presence of two parasitoids released by the United States Department of Agriculture, Animal & Plant Health Inspection Service, Plant Protection & Quarantine (USDA APHIS PPQ) to assist in the management of this pest.

The first of these parasitoids to be released and recovered was *Tetrastichus julis*, an internal parasitoid of the CLB larva. The larvae of *T. julis* are maggot-like and bright orange in color. In some samples 100 percent of CLB larvae contained parasitoids, although this varies not only from place to place but also from day to day in the same place. Data suggest that this parasitoid is capable of movement as rapidly as CLB. CLB larvae were only collected at 4 sites with parasitism rates by *T. julis* ranging between 25-100%, and an average overall rate of 54%.

The second parasitoid, *Anaphes flavipes*, is an egg parasitoid. Although this insect has been released at several Montana locations, the exact status has been more difficult to assess. This is due partially to the small size of the insect, and partially to the fact that CLB eggs are prone to desiccation, making it more difficult to determine when mortality was due to the parasitoid versus other causes. Based on previous year's data and recommendations from the Western Region CLB working group, this parasitoid was not a part of the official survey conducted by the MDA in 2008.



Image, Claude Pilon, www.bugguide.net

CLB larva parasitized by *T. julis*.

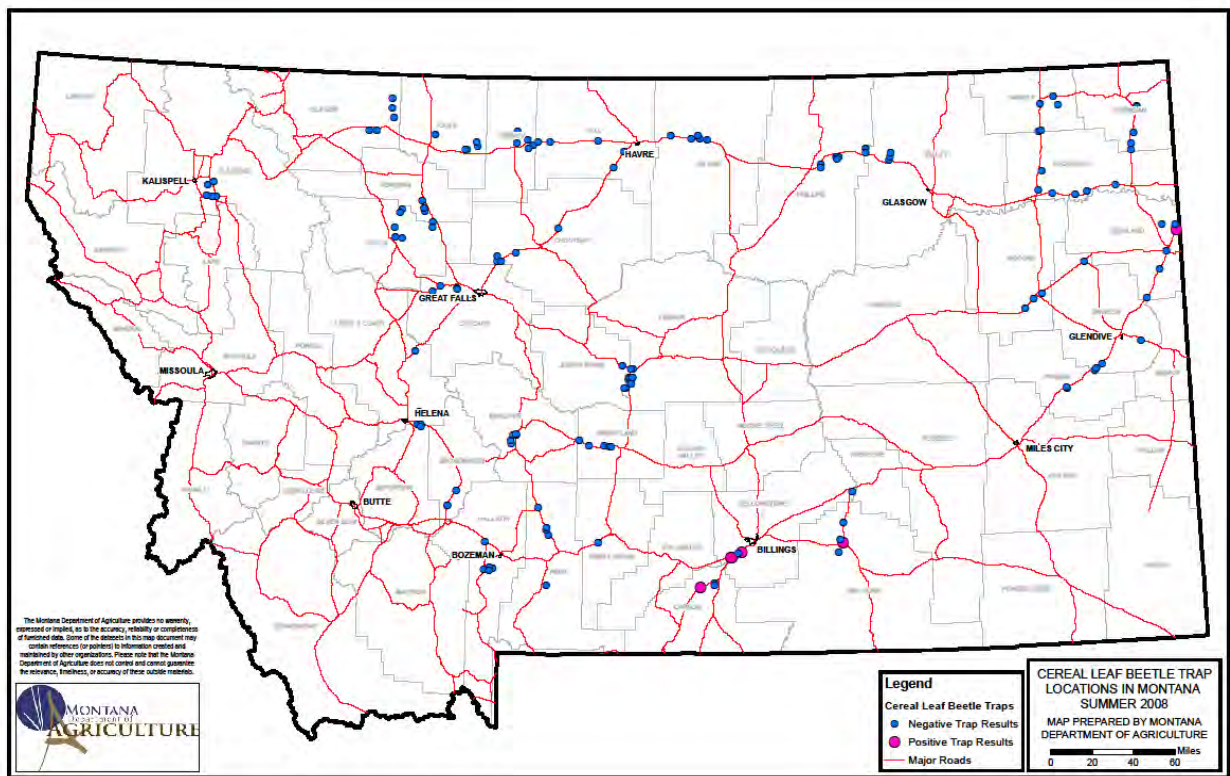
2008 sites surveyed for the presence of CLB and *Tetrastichus julis* (Walker)

COUNTY	Total # Samples	POS.	NEG.	<i>T. julis</i> Recovered
BIG HORN	4	1	3	NO
BLAINE	5	0	5	NO
CARBON	3	1	2	NO
CASCADE	5	0	5	NO
CHOUTEAU	5	0	5	NO
DANIELS	5	0	5	NO
DAWSON	5	0	5	NO
FERGUS	5	0	5	NO
FLATHEAD	5	0	5	NO
GALLATIN	5	0	5	NO
GLACIER	5	0	5	NO
HILL	5	0	5	NO
JUDITH BASIN	5	0	5	NO
LEWIS AND CLARK	5	0	5	NO
LIBERTY	5	0	5	NO
MCCONE	3	0	3	NO
MEAGHER	5	0	5	NO
PARK	6	0	6	NO
PHILLIPS	5	0	5	NO
PONDERA	5	0	5	NO
PRAIRIE	2	0	2	NO
RICHLAND	7	1	6	YES
ROOSEVELT	6	0	6	NO
SHERIDAN	5	0	5	NO
SWEETGRASS	1	0	1	NO
TETON	5	0	5	NO
TOOLE	5	0	5	NO
VALLEY	5	0	5	NO
WHEATLAND	5	0	5	NO
YELLOWSTONE	6	3	3	YES
TOTAL	143	6	137	2

RESULTS: Cereal leaf beetle was found at 6 sites in four counties, Big Horn, Carbon, Richland, and Yellowstone. Larvae parasitized by *Tetrastichus julis* were recovered at two sites, one each in Richland and Yellowstone counties.

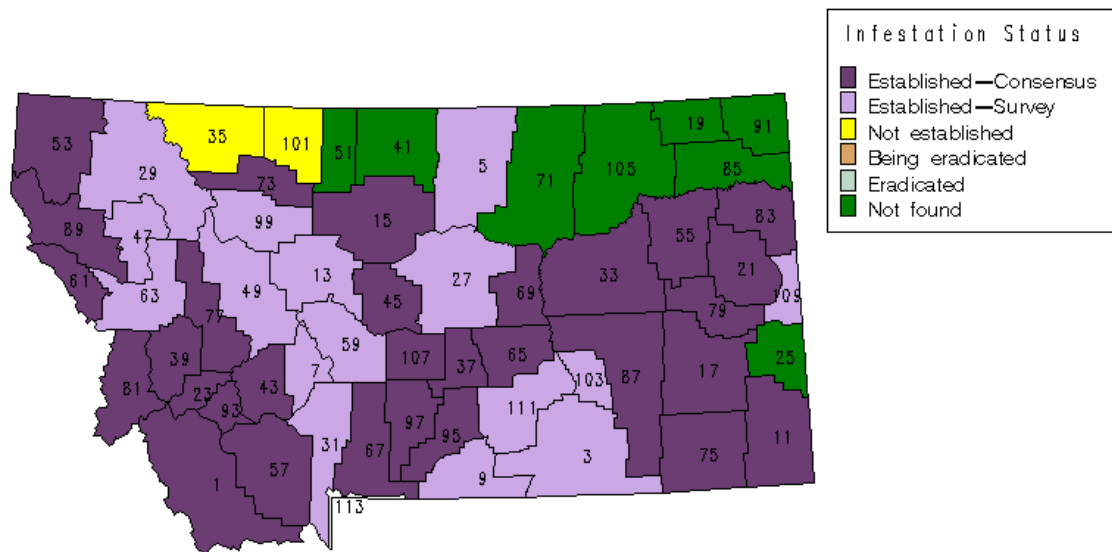
CLB Survey History

County	Year CLB found	Year T.j. first recovered	Year A.f. first recovered
YELLOWSTONE	1989	1995	1993
STILLWATER	1989	1997	1994
CARBON	1989	1995	1993
BIG HORN	1991	1997	1997
PARK	1993		
SWEET GRASS	1993	2005	
STILLWATER	1993	1997	1994
GOLDEN VALLEY	1993		
MUSSELSHELL	1993		
TREASURE	1993	1997	1998
ROSEBUD	1993	1998	1998
CUSTER	1994	1998	1998
GALLATIN	1995	1997	
POWDER RIVER	1995		
PRAIRE	1995		
DAWSON	1995	2007	
GARFIELD	1996		
RICHLAND	1996	2004	
RAVALLI	1997	1997	
BROADWATER	1997	1998	
FERGUS	1997		
CARTER	1997		
LINCOLN	1998		
FLATHEAD	1998	1999	
LAKE	1998	2000	2004
SANDERS	1998		
MISSOULA	1998	2000	
GRANITE	1998		
LEWIS AND CLARK	1998	1998	
JEFFERSON	1998	2004	
MADISON	1998		
PETROLEUM	1998		
TETON	1999	2005	
CASCADE	1999		
POWELL	1999		
DEER LODGE	1999		
SILVER BOW	1999		
MCCONE	1999	1998	
BEAVERHEAD	2000		
PONDERA	2000	2004	
CHOUTEAU	2000		
JUDITH BASIN	2000		
MEAGHER	2000	2004	
TOOLE	2004	2004	
WHEATLAND	2004		
BLAINE	2005	2005	
WIBAUX	2006	2007	
FALLON	NOT FOUND	2007	



**Reported Status of
 Cereal Leaf Beetle (Clb) , *Oulema melanopus*
 in MONTANA**

Data retrieved from National Agricultural Pest Information System on 08/25/2008



The Center for Environmental and Regulatory Information Systems does not certify the accuracy or completeness of the map.